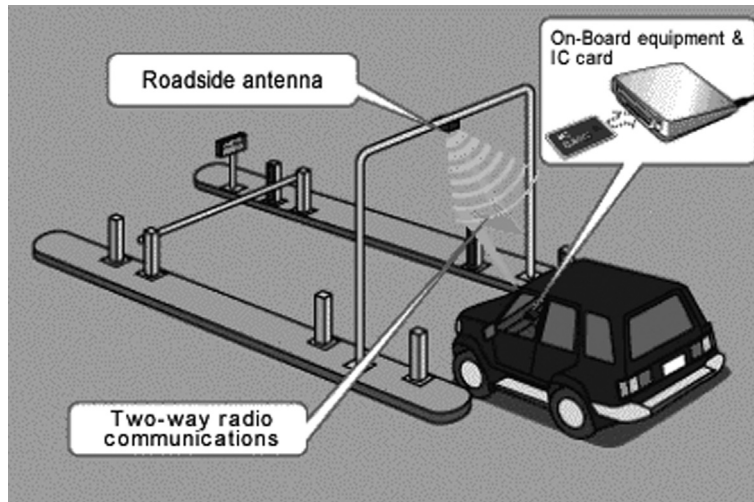


Area of Impact: Science and the Environment

5. Many countries are now using data logging to capture information at automatic toll gates.

Car drivers place a device on the car windscreen that contains a number identifying the driver. The scanner reads this number. This information is matched with records in the driver database and the driver's record is retrieved. The driver is allowed through if the account is in credit.

Since tolls are automatically paid at toll gates in this way, the driver can pass through without stopping the vehicle.



[Source: Source: www.mlit.go.jp/road/ITS/index.html]

- (a) Identify **two** processes involved in data logging. [2 marks]
- (b) Describe **two** other ways that automatic data logging may be used. [4 marks]
- (c) Explain **two** advantages of using automatic data logging to keep records compared with manual data logging. [4 marks]
- (d) Information obtained at automatic tolls may also be used to map traffic information and help drivers travel on the highways. Some cards may also contain customer's information or an identification number to relate the customer to a record in a driver database for later use.

To what extent do the concerns about invasion of drivers' privacy outweigh the advantages of using this system to improve the traffic of cars in a city?

[10 marks]